

Application No.: 10/591,172
Reply dated February 16, 2010
Reply to Office Action of November 16, 2009

Docket No.: 4600-0129PUS1
Art Unit: 1623
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AMENDMENTS TO THE CLAIMS

1. (Cancelled)

2. (Currently Amended) A phosphoramidite method for the synthesis of a nucleic acid oligomer without protecting the base moiety, which comprises:

reacting a 3' or 5' hydroxyl group of a nucleotide, optionally attached to a solid phase support, with a nucleoside phosphoramidite, a cyclonucleoside phosphoramidite, a 2'-substituted nucleoside phosphoramidite, a 4'-substituted nucleoside phosphoramidite, or a 2',4'-di-substituted nucleoside phosphoramidite to produce a phosphodiester linkage;

wherein ~~contacting a~~ the phosphoramidite nucleic acid or a phosphoramidite nucleic acid analogue is contacted with an activator, ~~which is a mixture of~~ and the activator comprises both a) an alcohol-type compound selected from the group consisting of hydroxybenzotriazole-1-ol (HOBt), a mono-substituted or di-substituted HOBt-derivative and a di-substituted phenol analogue [[;]] and b) an acid catalyst; to form a nucleic acid oligomer selected from the group consisting of imidazole, tetrazole, benzimidazoletriflate (BIT), 4-ethylthiotetrazole, imidazolium triflate(trifluoromethane sulfonate) and 4,5-dicyanoimidazole.

3. (Cancelled)

4. (Currently Amended) A The method according to Claim 2, wherein the substituted HOBt-derivative has substituents at its 4 and/or 6 positions.

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5. **(Currently Amended)** ~~A~~ The method according to Claim 4, wherein the substituted HOBr-~~derivative~~ is 6-trifluoromethylbenzotriazole-1-ol, 6-nitrobenzotriazole-1-ol, or 4-nitro-6-trifluoromethyl benzotriazole-1-ol.
6. **(Currently Amended)** ~~A~~ The method according to Claim 2, wherein the di-substituted phenol ~~analogue~~ is selected from the group consisting of 2,4-dinitrophenol, 3,4-dicyanophenol and 2-nitro-4-trifluoromethylphenol.
7. **(Currently Amended)** ~~A~~ The method according to ~~claim~~ Claim 2, wherein the acid catalyst is selected from the group consisting of imidazole, tetrazole, ~~and their derivatives~~ benzimidazoletriflate (BIT), 4-ethylthiotetrazole, imidazolium triflate and 4,5-dicyanoimidazole.
8. **(Cancelled)**
9. **(Currently Amended)** ~~A~~ The method according to Claim 2, wherein said activator comprises an equal amount of the alcohol-type compound and the acid catalyst.
10. **(Currently Amended)** ~~A~~ The method according to Claim 2, wherein said method is carried out with the nucleotide attached to ~~use of~~ a solid phase support.
11. - 13. **(Cancelled)**

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14. (Currently Amended) A The method according to Claim 2, wherein the activator comprises the mixture of 6-trifluoromethylbenzotriazole-1-ol and benzimidazoletriflate is used as the activator.

15. (Currently Amended) A phosphoramidite method for the synthesis of a nucleic acid oligomer without protecting the base moiety, which comprises:

reacting a 3' or 5' hydroxyl group of a nucleotide, optionally attached to a solid phase support, with a nucleoside phosphoramidite, a cyclonucleoside phosphoramidite, a 2'-substituted nucleoside phosphoramidite, a 4'-substituted nucleoside phosphoramidite, or a 2',4'-di-substituted nucleoside phosphoramidite to produce a phosphodiester linkage;

wherein contacting a the phosphoramidite nucleic acid or a phosphoramidite nucleic acid analogue is contacted with an activator, which is a mixture of and the activator comprises a) an alcohol-type compound selected from the group consisting of hydroxybenzotriazole-1-ol (HOBt), 6-trifluoromethylbenzotriazole-1-ol, 6-nitrobenzotriazole-1-ol, 4-nitro-6-trifluoromethylbenzotriazole-1-ol, 2,4-dinitrophenol, 3,4-dicyanophenol and 2-nitro-4-trifluoromethylphenol; and b) an acid catalyst selected from the group consisting of imidazole, tetrazole, benzimidazoletriflate (BIT), 4-ethylthiotetrazole, imidazolium triflate(trifluoromethane sulfonate) and 4,5-dicyanoimidazole; to form a nucleic acid oligomer.

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